

Two issues are unresolved for a theory of social revolution: (1) Under what circumstances is it likely that different groups in a society become destabilized within a short period of time? (2) Given the potential for free ride and the high risks of participation, how is rebellious action possible? While written within the context of rational choice theory, the article departs from conventional rational choice theories in major ways. In particular, the new theory emphasizes the usefulness of regarding individual actors as producers subject to framing effects. By attending to the consequences of governmental actions for individuals, the theory supplies a new interpretation of what happened in prerevolutionary France and Russia.

## Social Production Functions, Deficits, and Social Revolutions

PREREVOLUTIONARY FRANCE AND RUSSIA

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Tradition has it that revolutions must be attributed to a revolutionary group, preferably an oppressed one. For example, the most famous group singled out in the French Revolution is the capitalist bourgeoisie fighting off the feudal yoke. Yet this interpretation has not been unchallenged, and other groups have been suggested: the holders of venal offices, the country against the town, the poor against the rich, the *sans-culottes*. More recently, peasants have been identified as the revolutionary group. The controversy goes on. Similarly, there is no consensus on the major revolutionary group in the

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Russian Revolution. Was it the peasantry? The workers? A conspiracy financed by Germany?

Single-group theories so far have not been satisfactory. Some new theories of revolution attempt to get away from the obsession with the "group," arguing that although there may be one major group one has to look at configurations of a variety of groups. Thus, Tilly (1978) stressed that the major group (the challengers) can only achieve its goals if it can mobilize other groups. Skocpol (1979) argued that although peasants are the major group in social revolutions, it is essential to focus not just on class conflict with other groups, but also on the state as an independent actor and on the international configuration of states. The crucial role of the state is also underlined by Goldstone (1983).

Given the importance of the state and of a great variety of different groups, a central question remains unanswered even by the new theories: Under what circumstances is it likely that groups situated in different strata of society become destabilized within a short period of time? This is important because even a weak state is likely to be able to cope with one group at a time.

Yet another problem of theories of revolution has been connected with collective action. First, virtually all theories of revolution neglect "individualized" collective action, that is, massive, similar individual resistance that has effects comparable to group collective action on the aggregate level. Second, changes in government and/or society intended by "a revolution" may vary, but they are public goods inviting free riding in large groups. On this basis, Tullock (1974) concluded that there are no social revolutions, only coups d'état. This is clearly contradicted by the historical evidence and yet the vexing problem of collective action remains. A variety of attempts have been made to solve this latter problem within the context of rational choice theory, such as Klandermans (1984) and Muller and Opp (1986). These are mainly based on some variant of the assumption that perceived personal influence on the production of a collective good can be much larger than factual personal influence. While there is some evidence that very small objective probabilities are overestimated (see Tversky and Kahneman 1981), the extent of overestimation is not such that action would become likely in the face of nontrivial costs. Thus, for revolutions, these solutions are theoretically inadequate. Another recent rational choice explanation introduces the sanctioning power of "strong" communities (Taylor 1988, 63-97). While this is arguably the most convincing attempt to date to deal with the question of selective incentives as part of a theory of revolutions it also ignores individualized collective action and does not deal with the initial stages of

collective action necessary to mobilize norms that are subject to community sanctioning. In addition, Taylor's theory is restricted to collective action among poor people. Here again, the single-group assumption is operative to the effect that if only one group is engaging in revolution, it should be a poor one, and it should engage in a great deal of group collective action.

In the following I will try to sketch the outlines of a theory of social revolution that addresses these questions: (1) Under what circumstances is it likely that groups situated in different strata of a society become destabilized within a short period of time? (2) What is the role of individual resistance, and how can it be explained? (3) How is rebellious collective action possible in the face of considerable risks? I will submit (i) that governments in all societies exert pressure toward increase of their budget, and (ii) that in certain social structures deficits are likely to make the government destabilize its own society in an attempt to fill the empty coffers of the treasury. Central to the explanation of how a government is able to destabilize its own society is the idea that people are mainly producers rather than consumers, that their characteristic ways of producing social and material goods can be seriously disturbed by government actions aimed at reducing deficits, and that this disturbance can lead to the single-minded pursuit of resistance, individually and in the context of collective action even in the face of high risks. It will be argued that this is possible because, although people act rationally, they can only pursue one major goal in any one action situation, with other goals exerting their influence only indirectly.

Prerevolutionary France and Russia serve as concrete examples. No detailed historical analysis can be offered in these few pages; the main outlines of the historical situations leading to each of these revolutions will be assumed to be known to the reader.<sup>1</sup>

## ELEMENTS OF THE THEORY OF REVOLUTION

### SOCIAL PRODUCTION FUNCTIONS

Following Adam Smith, I assume that all human beings aspire to maximize at least two things: social approval and physical well-being (see Lindenberg 1984a, 1986a). In this there is no difference between human beings. On the basis of this assumption, the emphasis in social analysis lies on production rather than consumption, and the inquiry focuses on the

structural possibilities for the production of social approval and physical well-being, their distribution among people, their vulnerability, and so on.<sup>2</sup>

Let us look at some examples in prerevolutionary France. A nobleman enjoys certain privileges that confer status on him, such as tax exemptions, judicial privileges, and honorific rights. He may also own a public office that confers additional status and various streams of income. Yet by law or custom direct business activity is not possible for him. Compare this to a farmer with a small holding. Ownership of the land gives him some status in the community and makes him creditworthy to some degree. Most likely he has a wife and with their combined labor they are able to extract a certain amount of produce from the land, depending on the quality of the land, the weather, and their good health. In addition, the farmer may have the right to make use of the commons to graze his cattle. Yet there are complications. He cannot simply live off the land because he has to pay various taxes and seignorial fees, and he may not be allowed to bake his own bread because the seigneur has a monopoly. More than 50 percent of the value of a small yield of his land may be absorbed by these taxes and fees. The remainder is not enough for feeding the family let alone for improving the farm. Thus it is likely that his wife, if it is at all possible, contributes to the income by going to work in, for instance, the local textile factory.

Both the nobleman and the peasant have some factors at their disposal for the production of social approval and physical well-being: certain privileges, rights, and possessions for the nobleman; and certain possessions, rights, physical labor, and luck for the peasant. These factors yield more or less social approval and/or physical well-being. For the purposes at hand, it is not necessary (even if it were possible, which it might not be) to state the exact nature of the relationships between factors and products (social approval, physical well-being). It suffices that we can identify rough outlines of these relationships. These functions are also necessarily incomplete in the sense that they are tacitly assumed to contain nested production functions for each input factor. For obvious reasons I would like to call them *social* in the sense that they contain a relational element (status) and that they are elements of a social structure.

Maximization of social approval and physical well-being translates into two courses of action or investments: first, attempts to secure one's present production function; and second, attempts to improve one's production function, which, due to diminishing marginal returns from given input factors, will include attempts to command different factors. For example, in prerevolutionary France, a shipper, merchant, wholesaler, or other business-

man could frequently invest in his business in order to become rich enough to give up his direct commercial activities and buy himself ennoblement, thereby improving his social production function enough to transform it. While recent ennoblement would not gain much extra social approval, it would be the beginning of an ascent to the aristocracy for his posterity three or four generations hence, and it would bring immediate tax and judicial privileges. Ford (1953, 208) counted 1,207 such cases between 1732 and 1748 in Paris alone.

At the lower end of the scale, similar investment behavior could be observed. A country girl trying to improve the return on her own labor would frequently go into the nearest town to work as a *servante* and save up a dowry that would allow her to attract a young man who worked and saved with the same dream: setting up independently as a farmer or with one's own loom. With some luck, ten years of working and saving would allow them to save up enough for this purpose.

#### THE MOTIVATING POWER OF LOSS

Kahneman and Tversky (1979) have proposed that the utility of an outcome is always subjectively measured in terms of gains and losses relative to a neutral reference point. They also assume that utility (or disutility) decreases marginally with increasing gains (or losses), which implies an S-shaped utility function for gains and losses, with the neutral reference point being the point of inflection. Since it has been repeatedly observed that people weigh losses heavier than they weigh gains of the same amount, Kahneman and Tversky assume that the utility function is steeper for losses than for gains rather than being symmetrical around the reference point. This is a very important assumption because it accounts for many effects previously not captured by expected utility theory, such as people's reluctance to accept fair bets.<sup>3</sup>

Kahneman and Tversky's assumptions have recently been combined with the discrimination model of stochastic choice to yield what has been called the *loss hypothesis* (see Lindenberg 1986b, 1988):

- (1) The avoidance of uncompensated loss (that is, the prevention of imminent loss and the reduction of recent loss) is itself a good that frames decision situations.
- (2) The likelihood that this frame dominates other possible frames in any given situation grows disproportionately with the size of the loss, and

- (3) the costs incurred in pursuing this goal may be higher than the value of the loss itself.

A “frame” in the discrimination model is like a particular pair of glasses with which the situation is seen. It consists of a situational goal and the criteria for judging various approximations to that goal. Alternatives and outcomes are selected and ordered in term of a frame.<sup>4</sup> Thus, if loss-avoidance is the situational goal, courses of action that might reduce the loss are situationally selected and ordered according to the degree to which their outcomes approximate the goal.

Due to the assumption of one overriding goal per situation, it is possible that the costs incurred are indeed higher than the value of the loss itself.<sup>5</sup> In terms of evolution, this very feature may have had a competitive advantage because a threat will be taken much more seriously if it is backed by the willingness to incur high costs. Thus the credibility of threats becomes proportional to the possible damage.

There is another important framing effect. Situational aspects not related to the frame (for example, the effort involved in reducing or preventing the loss) influence the choice only indirectly.<sup>6</sup> For this reason, the chance that individuals will act to achieve a much-desired outcome even if their actions will make little difference is much larger than assumed in subjectively expected utility (SEU) theory, which may be said to have a built-in “apathy bias” compared to the discrimination model.<sup>7</sup>

#### THE LOGIC OF DEFENSIVE COLLECTIVE ACTION AND SOCIAL PRODUCTION FUNCTIONS

By the very nature of being producers of social approval and of physical well-being, human beings are vulnerable with regard to their social production functions. Every actual or threatened deterioration will be experienced as a considerable loss. Thus the loss hypothesis is relevant to social production functions. Since these functions exist for *categories* of people, a threat to one is likely to be a threat to all individuals in that category. Thus redressing or averting a loss is likely to have a public good aspect and possibly the structure of a social dilemma, giving rise to the question of the conditions under which collective action may be expected in this case.

Yet this quick jump to collective action ignores what may be called the *hypothesis of individualized collective action*. This proposition builds on the loss hypothesis:

When individuals in a group of people with similar social production functions<sup>8</sup> experience a loss or an acute threat, loss avoidance is likely to become an overriding *personal goal* of action, the higher the actual or anticipated loss. Thus they will engage in *similar individual* action aimed at avoiding the loss. In this way, the behavior tacitly coordinated by the similarity of social production functions is likely to have aggregate effects that are similar to or even more effective than group collective action.

For example, before the French Revolution, resistance to paying taxes and seignorial dues was widespread among the peasants. Due to the difficulty of fighting this kind of massive resistance, it was far more effective than local rebellious collective action (see also Shanin 1971). Because of the framing effect, the cost elasticity for each individual would have been quite low if loss avoidance were the action frame. This means that individuals might have become unusually tenacious (such as in handling the tax collector when he came by). Individualized collective action could also be observed in the French army. Individual officers and soldiers were often unwilling to take action (see Hartmann 1909). Massive unwillingness to loan money to the government by the rich bourgeoisie and the increasing unwillingness of the high aristocracy to accept ennobled bourgeois as aristocracy were other examples of individualized collective action with destabilizing effects before the French Revolution.

Due to the single-group hypothesis and the assumption of dramatic group collective action that belongs to it, the possibility and importance of individualized collective action is generally underestimated. For a multigroup theory of revolution, it would be entirely possible that the destabilization of a society before a revolution is mainly the result of individualized collective action in various societal groups.

For group collective action, framing effects also lead to unconventional predictions. At present, Olson's (1965) theory of collective action is the baseline against which new contributions are measured. On the basis of Olson's theory, Tullock (1974) concluded that there are only coups d'état and no social revolutions. Yet the historical evidence is not compatible with this conclusion. One can observe many instances of *social* collective action where, according to Tullock, the best bet would be to stay put and see who wins.

Taylor (1988, 63-97) recently extended Olson's theory.<sup>9</sup> His argument (the "thin theory of collective action") runs roughly as follows. There are forms of motivation (expressive, altruistic, and pure activity pleasure motivation) that cannot be handled by rational choice theory. The latter is unfortunately

restricted to “thin” rationality, that is, to the assumptions that agents only act instrumentally, that they are egoistic, and that the range of selective incentives is restricted to economic and social incentives. A rational choice explanation of collective action must thus stick to “thin” self-interest motivation. In the revolutionary context, this motivation is provided by strong communities. Members of such communities have common beliefs and values relevant for direct and many-sided interactions, and their exchange relations have a long time horizon and include open as well as quid-pro-quo exchanges (Sahlins’s “generalized” and “balanced” reciprocity). On this basis, communities develop strong sanctioning power that provides the necessary conditions for “thin” collective action: The action alternatives are well-defined and connected with sizable differences in economic and social incentives.

Bringing community back in is very important. Others have done so before (Friedrich Engels, for example), but the link is now more systematically worked out and Taylor (1988) collected a number of empirical studies corroborating the importance of community. What is lacking is an explanation of individualized collective action and of the initial stages needed to mobilize norms and sanctions against free riding.

When one considers the framing effect of loss, the process leading to collective action can be schematically described as follows. The *first stage* is individualized collective action as described earlier. Under certain circumstances, this simultaneous action gives rise to a second stage; the basis in individual action makes free riding unlikely in this next stage.

The *second stage*: Some individuals (a subgroup of the larger group) may believe that only joint collective action can restore the situation or avert the loss. Then the larger the loss or threatened loss, the more likely it is that for each individual in that subgroup collective action will become the conditions for the realization of personal goals, that is, a good dependent on others’ willingness to participate.<sup>10</sup> In this way, collective action is an *instrumental extension of individual goal seeking*. Because the frame for the individual is “loss avoidance” (with certain criteria for ordering the alternatives in terms of this goal) and not “cost minimization,” *at this stage* free riding offers no extra incentives, but has the added disadvantage that it does not contribute to loss avoidance. Following this logic, the crucial factor for collective action is how much faith people have in the willingness of others to participate. Time and again empirical studies of collective action show this subjective probability to be an important factor for participation. This is not to deny that the cost of participation will also play a role. Of course, prohibitive costs will

prevent the advance from the first to the second stage. But, as stated earlier, due to the indirect effect (cost affecting only the salience of the frame, which in turn influences the decision probability), the cost elasticity of participation is much lower than in SEU or the “thin” theory of rationality.

Because of framing, participation in collective action in this stage does not have the structure of a social dilemma but rather that of what Sen (1982) has called an *assurance game* in which each individual is willing to participate provided the others will do the same. If people think they know what to do and if the cost of participation is not prohibitive, those members of the larger group who believe that others will go along will in fact all participate in the collective action.

The *third stage*: By its very existence, the participating group demonstrates the willingness to participate, thereby inducing those bystanders to join who had hesitated due to a low *ex ante* faith in the willingness of others to participate. Again, at this stage the situation is an assurance game rather than a social dilemma.

The *fourth stage*: Since the achievement of the individual goal (loss avoidance) is conditional upon the participation of many, each participating individual has an incentive to urge others to participate as well. Because we are dealing with people who are “in the same boat” (that is, who have the same social production functions), it is likely that some sense of belonging to one group already exists or can at least be appealed to. For this reason, it is also likely that the attempts to get others to participate will include appeals to solidarity and that such appeals will have some effect. Additional participants are recruited at this stage from those bystanders who are or had been undecided and needed an extra push. However, the importance of this stage lies in the fact that a new element is introduced into the action situation. The appeals to solidarity are appeals to normatively governed cooperation for a *group cause*, mobilizing group sanctions against noncooperators.

The *fifth stage*: Due to appeals to solidarity and aided by the sight of massive participation and supposed communality of motivation, some of the bystanders for whom the situation has the structure of a social dilemma will join. Group sanctions will operate as selective incentives in Taylor’s (1988) sense.

The *sixth stage*: As participation increases, the situation will become threatening for people who have social production functions different from the first group and are likely to become victims of the collective action unless they join it. For these individuals loss avoidance is again the major motivation, but the threat is secondary in the sense that it is produced by the collective action of others.

Undoubtedly, there are loops in this process—some stages are run through a number of times. It is important to notice that the first three stages are mainly due to framing and that only the fifth stage is overwhelmingly governed by selective incentives in Taylor's sense. Even in that stage there does not have to be a community. Strong community as described by Taylor is likely to provide the conditions for reaching the necessary consensus and for mobilizing solidarity-related norms and sanctions once collective action is already under way. However, strong community is not the *only* basis. Such associations as the *parlements* in prerevolutionary France created a forum in which a similar development in stages is likely to occur. The presence of such a forum for the French aristocracy sharply contrasts with its absence for the Russian aristocracy. The latter remained by-and-large without collective action during the revolutionary process. The group formation necessary for collective action depends on the existence of some prior bonds, but, due to the *sequential* effects of growing collective action, the bonds do not have to be as strong as in Taylor's strong community. Nor is it necessarily the case that an existing group or association will remain one unit under pressure. Group boundaries for collective action are likely to form on the basis of similarity in social production functions; the diversity of social production functions in a nonhomogeneous group would create considerable suspicion of strategic behavior even if the subgroups have a common motivation to redress or avoid loss.<sup>11</sup>

This logic of *defensive* collective action does not necessarily apply to collective action for the pure improvement of social production functions (without prior deterioration or threat of deterioration). Misery by itself will not produce collective action if it is continuous. Acute shortages of food can bring about riots, but continuous undernourishment cannot. Collective action for political rights, such as the curtailment of state power, can be expected in response to state-induced deteriorations or threats of deterioration of production functions. Collective action for such rights for the purpose of pure improvement, if it occurs at all, must either be based on the coordinated expectations of exceptionally large improvements in social production functions or be brought about by material selective incentives as described by Tullock (1974).<sup>12</sup>

## ROBUSTNESS AND VULNERABILITY OF SOCIAL PRODUCTION FUNCTIONS

Let us return to the examples of the nobleman and the peasant, whose social production functions differed greatly. For example, their factors were

differentially efficient. For one, while seignorial rights were very efficient factors for the production of income and thus physical well-being, the farmer's own labor (with or without small holdings of land) was very inefficient in this respect. Second, the nobleman's function was quite robust, while the peasant's function was very vulnerable in the sense that relatively small changes for the worse, such as temporary ill health, temporary unavailability of employment for the wife, or small increases in prices and/or taxes and fees, could drastically change the function. For example, an increase in taxes could be just enough to exhaust the peasant's ability to keep his debtors at bay. He might have to sell his land and thereby lose his major source of status, credit, and income and be forced to become a migrant worker with a social production function considerably worse than the one he had before. Without land the migrant worker would easily be tumbled into indigence by unemployment, ill health, or old age. Once in that state, he would be likely to extract some necessities from others by threat and intimidation, and would himself become a threat to the stability of the social production of others.

What is of interest here is not the difference in rich and poor, but the interrelation of the social production functions of our two examples: Two important factors in the function of the nobleman, namely tax privileges and seignorial rights, contribute significantly to the vulnerability of the peasant's social production function. Tax privileges shift the incidence to those without such privileges and increase their burden. Seignorial rights are a source of income for the nobleman, but they increase the financial burden of the peasant even more without any quid pro quo. Increases in taxes and in seignorial fees will thus increase the number of peasants whose social production functions are drastically made worse while leaving the social production functions of the noblemen unscathed or even improved. Conversely, with the taxes and seignorial fees absorbing a large part of the peasant's income, there are no reserves left to cushion the blow of strokes of bad luck, such as ill health, a bad harvest, or unemployment. Bad luck is then punished by the loss of important input factors. One can easily imagine that such a juxtaposition of social production functions would have a direct impact on the government's ability to raise revenue.

#### NEGATIVE TRANSFER SYSTEMS

The term "revenue" is not equivocally applicable to societies in which nonmonetarized burdens, such as taxes in kind and liturgical services (for example, *corvée*) exist. Instead, I would like to speak of a *negative transfer*

*system* (NTS) in which a government transfers burdens that it has contracted itself or intends to contract to other entities.

For the head of a government, the social approval by relevant groups including the heads of other governments and higher government officials in one's own government depends on the amount of influence the government can exert on other governments and the amount of control the government can wield in its own realm. On this level I will ignore physical well-being in the social production of heads of government because their very position can be taken to be an input factor of such efficiency.

According to our behavioral assumption, heads of governments will invest in securing and improving their social production function. This means that they will invest in increasing their influence abroad and in increasing their control internally. A strong military force may accomplish both, as do successful wars, while unsuccessful wars may reduce both simultaneously. War expenses thus cannot automatically be counted as extraordinary expenses. Bureaucratization will increase internal control. All of these things are dependent on resources and these, in turn, depend on the government's ability to transfer burdens to other entities, such as the NTS. Given the social production functions of heads of governments, their investment intentions will exert strong pressure for an ever-increasing budget.

Historically, governments have evolved under very diverse circumstances. In all cases the development of internal control was intimately related to the growth of a particular form of an NTS. What interests us most in the context of this article is the case in which central control over powerful groups could only be achieved by giving these groups a privileged position in the NTS, as in France and Russia, thereby strongly influencing the kind of and distribution of social production functions.

#### REGRESSIVE NEGATIVE TRANSFER SYSTEMS AND DESTABILIZATION OF SOCIAL PRODUCTION FUNCTIONS

When an NTS exempts the economically most powerful groups in a society to various degrees, it is obviously regressive by shifting the major tax burden to the economically weaker groups. Tax increases will then create vulnerable social production functions on a large scale, thereby exhausting the extendability of revenue. Yet given the social production functions of the head of the government, there is strong pressure to increase revenues. At this point various options, singly or in combination, are theoretically open: loans, change of the NTS, and attempts to improve the economy to improve the

taxability of the nonexempt subjects. Loans are generally the easiest to effect. They have immediate influence, as opposed to the stimulation of economic growth, and they do not lead to a head-on collision with privileged groups. A drastic change in the NTS would do this since it would only result in increased revenue if privileges were withdrawn. Stimulating economic growth may have its own adverse effects on the stability of social production functions. For example, lifting all import and export restrictions may be beneficial in the long run, but it can cause serious shortages and increase unemployment in the short run, thus having an effect on social productions similar to that of tax increases.

The more regressive the NTS the less likely it is that any of these options will succeed in creating a stable fiscal structure. Loans cannot be paid back; the privileged have few incentives (or may even have disincentives) to engage in innovative business activities, while the nonprivileged are either aspiring to the social production functions of the privileged or are too destitute to engage in innovative business activities. The more regressive the NTS the more entrenched are the vested interests of the privileged. Yet once any of these options is followed, it will exert its own pressure on the budget: interest payments, economic programs, social relief programs, concessions to the privileged, and so on.

As the deficit grows, a public economy will develop in which tax increases will be followed by tax reductions, and loans by economic and fiscal reforms, leading again to increases. As various succeeding finance ministers apply these options in a shorter period of time, virtually everyone's social production function deteriorates either directly or by becoming uncertain. Most important, the deterioration can readily be attributed to the government. The government loses support in a broad range of social groups just at the time when it is financially too weak to afford an effective repressive apparatus. Under such circumstances a social revolution is likely to develop unless substantial financial and/or military aid is coming from abroad. Such a revolution is social in the sense that the government loses support from a great variety of social groups, as opposed to a palace revolution in which one part of the elite is removing another.

In this conception of social revolutions, it is nonsensical to ask which is the revolutionary group. Such revolutions only happen by virtue of a *general* destabilization of social production functions, and their accomplishment is in the first instance a stabilization of social production functions. While certain groups may ultimately be more successful than others in achieving this stabilization, this does not mean that they have "made" the revolution.

If it must be attributed to an entity, then the government itself would be the best candidate. In the final analysis, nobody makes a social revolution. It happens in certain fiscal structures with a greater probability than in other fiscal structures. As opposed to palace revolutions, social revolutions do change the NTS and, after a period of recovery, allow a higher degree of fiscal prudence than was possible within the old NTS. What no revolution will change is the part of the social production function of heads of governments that relates to international influence and internal control. Thus, unless there are very strong checks on expenditures, budgets are bound to increase again; if they are not accompanied by offsetting economic growth, deficits will again become a "normal" feature of the public economy.

### SOME HISTORICAL ILLUSTRATIONS

In the following discussion some points of the foregoing will be illustrated with events from prerevolutionary France and Russia. I focus mainly on the multigroup and government finance aspects. Analyses of individual collective action and of the sequential nature of collective action is a much more challenging task due to the lack of systematic historical description and will be attempted later.

#### PREREVOLUTIONARY FRANCE

From early on, France developed a negative transfer system based on broad tax privileges. Although many taxes were increased and new taxes created over time, loans and other sources of instant revenue without taxation (such as the sale of offices) enjoyed a long tradition. In the two hundred years before the revolution, we also find various attempts to withdraw the tax privileges of the clergy and the nobles. Of these, only the *capitation*, introduced by Louis XIV during wartime, had some lasting effect. Even this tax was thoroughly eroded by *abonnements* and gross underassessment among the clergy and nobility. Resistance against tax increases or new taxes, especially among the peasantry, in the form of tax riots was also traditional. Wars were equally frequent. The population was growing rapidly in the eighteenth century, probably due to improved internal control and better food distribution, multiplying the number of those with vulnerable social production functions, but also increasing revenue. Yet at an increasing rate expenditures were outdistancing revenue. Industrial performance was generally

increasing, but with many intermittent slumps. As more seignorial rights were acquired by formerly bourgeois noblemen who had the legal training to discover old and forgotten rights, the burden of seignorial fees greatly increased in the eighteenth century. Because many of these seigneurs were also judges in the seignorial courts, relief from the fees through litigation, although often attempted, was rarely forthcoming. The inherent limitations in a very regressive negative transfer system led to a public economy of makeshifts and to a general deterioration of social production functions. This can be gleaned from the following short account of finance ministers under Louis XVI.

### The Public Economy of Makeshifts under Louis XVI

In 1774, Baron Anne-Robert-Jacques Turgot began his office as minister of finance under Louis XVI with the resolve not to increase taxation, not to contract new loans, and to engage in economic reform. He reduced duties levied on wine when transported, abolished the duties on grain, encouraged grain imports, abolished export duties on linen and silk, did away with privileged trade corporations, replaced the highway *corvée* by an extra imposition on the revenue tax (*vingtième*), and reduced the number of offices. Some of these measures had results, but merchants resisted the increase in the revenue tax and were able to have Turgot replaced in 1776. His successor, Clugny, abolished the increase in revenue tax. But there were revolts against the feudal duties (seignorial fees), and confidence in government rescriptions declined. The same year Jacques Necker succeeded Clugny as minister of finance. Necker reimposed the duties on grain, bowing to the popular belief that such a measure would improve the bread supply. He also reduced taxes and showed himself to be a genius in contracting loans, raising revenue without rocking the boat. This made him very popular, especially after France had decided to intervene on America's behalf in the Revolutionary War in 1778 and revenue was needed. Necker was succeeded by July de Fleury in 1781 who raised taxes soon thereafter, sold more offices, and issued new loans. While the loans contracted by Necker and de Fleury were enough to cover the extra war expenses, they did not reduce the "ordinary" deficit, and due to the war, millions of *livres* were added in expenses for pensions.

After a brief interlude with d'Ormesson as finance minister in 1783, Charles-Alexandre de Calonne took over. He found himself confronted with an enormous deficit and resolved to search for any and all means to obtain liquid revenue. He introduced a new tax on luxury items that was fiercely

opposed by the nobles in Paris. He sold many more offices, created new titles, contracted some new loans, intervened in the Bourse (which brought it almost to a standstill), and had to withdraw these regulations again. In 1786 Calonne proposed to abolish the privileges by introducing one new uniform tax, the *subvention territoriale*, a proposal that created an enormous battle of wills between the government and the nobles (parliaments). In 1787 five major tax receivers, whose payment was already anticipated in the budget, went bankrupt, and resistance to taxation was increasing. The battle over the *subvention territoriale* took on grotesque proportions because the nobles were able to enlist the lower classes in the towns and peasants to fight for their cause by making them believe that the government wanted to increase taxes through this proposal. Calonne was replaced by Etienne-Charles de Loménie de Brienne, who immediately abolished the *subvention territoriale*. This was a great victory for the nobility. Brienne also reduced the duties on grain again, abolished some offices, reduced pensions, and contracted more loans, but he suspended redemption payments on old loans, and interfered with the Bourse. Yet the financial situation was worse than ever. Only a radical change of the negative transfer system could help.

In 1788 Lamoignon developed a scheme to break the nobles' resistance to tax reforms: While the institutional vehicle of noble resistance was the right of provincial parliaments (dominated by nobles) to register new edicts, this vehicle was to be broken by stipulating that only one court in Paris could register new edicts. In addition, the judicial power of provincial courts and the power of seignorial courts were to be drastically curtailed by a complete judicial reform. This reform would have two extra advantages: It would direct the majority of judicial fees from noble courts into the coffers of the government, and it would greatly reduce the seigneurs' power to enforce feudal duties, thereby freeing the subjects' resources for royal taxes. The opposition against this scheme was more widespread and fierce than any previous resistance by nobles in the Ancien Régime. The nobles called for an Estates-General, a lawmaking assembly of representatives of estates that had not convened in more than 150 years. The government gave in, also impressed by increasing local revolts that were partially instigated by the parliaments as a defense against new tax increases. The Estates-General were to be convened in 1789. Brienne had to go and was replaced by Necker, who immediately withdrew Lamoignon's scheme and resumed redemption payments in order to contract new loans. The severe winter of 1788-89 created near-famine conditions on a large scale, followed by bread riots and looting. These events alarmed the wealthier bourgeoisie. News of the planned Es-

tates-General and their preparation via declarations of complaints (*cahiers*) raised the expectation among the lower classes that through this assembly the tax burden would be greatly relieved. In anticipation of these expected changes, many refused to pay taxes and revenue declined even more, bringing the state to bankruptcy. The royal military was unable and at times unwilling to keep order, and the wealthier bourgeoisie created their own militia, the Garde Nationale, and broke into royal arsenals for arms and ammunition. In the same year (1789) the king came under control of the revolutionaries in Paris.

Within a span of fifteen years, the ministry of finance had changed hands no fewer than seven times. Every option was applied: loans and sale of offices, stimulation of economic growth, change of the NTS, and tax increases or new taxes. Each minister repealed the regulations of the previous one and issued his own. The nobles saw their privileges assaulted and then defended; the commercial bourgeoisie saw duties on the same good lowered, raised, and lowered, and trade restrictions abolished and reintroduced. Assaulted by higher prices and food shortages, the lower classes saw no quid pro quo for their financial tax burden. While the social production functions of the poorer population deteriorated and those of the nobility became uncertain, the wealthier bourgeoisie was in a peculiar situation. It could have lived with the Ancien Régime or with a new regime as long as private property was not abolished. Their social production functions were quite robust. What may have struck them most acutely was the ensuing disorder and the fear that they might lose their investments in government loans. A more subtle but perhaps more permanent change in their social production functions may have been the realization that the aristocracy might eventually close its ranks. This must have lowered the value of investment in a transformation of their social production function through ennoblement and enhanced the value of social approval of other bourgeois. In this subtle but important adjustment. The French revolution may have been "bourgeois" after all.

#### PREREVOLUTIONARY RUSSIA

Catherine the Great, tsar of Russia, was reputedly an admirer and friend of Voltaire's. Yet when she heard of the French Revolution she quickly arranged for a more repressive regime. Serfdom was greatly extended under her rule. In 1766, however, shortly after she had ascended to the throne, she had written the *Instructions* to her own Grand Commission on internal

reform; the ideas put down in these *Instructions* were so radically humanitarian that the booklet was not allowed to circulate in prerevolutionary France. What had happened? Her grandson Alexander I, who ascended to the throne in 1801 just nine years after his grandmother's death, had a similar turnaround. He began his reign with attempts at very liberal reform only to turn reactionary thereafter, pleading religious enlightenment. Secret societies sprang up plotting constitutional reform or revolution. Alexander's brother Nicholas I succeeded him in 1825 and showed a milder case of this change of mind. Only his son and successor Alexander II (reigning from 1855 to 1881) began and ended with reforms. But he was assassinated.

The most likely conclusion from these turnarounds is that autocracy in Russia was a matter of tyrannical personalities at the head of the state. The turnarounds also cast doubt on the assumed power of the tsar to do as he or she pleased. Lastly, it can be concluded that these tsars had the feeling that something should be changed, but were not able to do so. Why not?

At first sight, the situation in Russia in the middle of the nineteenth century seems quite comparable to that of prerevolutionary France. The nobility enjoyed considerable privileges (including tax privileges) and at the bottom of the scale a large population was confronted with vulnerable production functions. The government engaged in numerous wars and acts of annexation, the budget was generally in the red, peasant revolts were frequent, and the population was growing. Yet there were some crucial differences. Russia was much larger than France and lacked roads and means of transportation over vast distances. There were relatively few towns in Russia and its industrial capacity was relatively underdeveloped. Even more important is the fact that the social production functions were quite different. Most peasants were serfs and thus the personal property of some noblemen, whereas prerevolutionary France had very few serfs left. The nobility was in a most peculiar situation due to Peter the Great's reforms some two hundred years before. They had no regional base and their status was highly dependent on their position in the imperial bureaucracy. In France the power of the nobility vis-à-vis the king was largely based on regional institutions such as the parliaments. In Russia, the imperial bureaucracy was in fact the only corporate institution of any importance for the nobility. Power of the imperial bureaucracy was thus a precondition for maintaining or improving one's status. On the other hand, the power of the bureaucracy could only be maintained by a growing state budget, impossible without liberalization. This was the contradiction within the system that Peter the Great had devised. In Russia the state budget would not have improved very much by doing away

with tax privileges because those who were privileged got most of their money from the state, either directly or via loans.

In former times, creating serfs was quite rational: It kept peasants from running away and becoming uncontrollable; it could also be used to buy the loyalty of military men by granting them serfs; it assured that the nobility would have an extra source of income so that the state would not have to pay as much for services in the imperial bureaucracy; it saved control costs, as the nobility could be used as tax collectors who were responsible for the poll tax levied on their serfs. After her turnaround, Catherine the Great yearly gave nearly 120,000 crown peasants away as serfs. It later became apparent that the availability of free labor and land in a largely nonmonetarized bureaucracy provided strong disincentives for the nobility to improve or even maintain agriculture. It became equally apparent that the state budget could not rest on such a small tax base, especially after the fiasco of the Crimean War in 1855 proved that the military budget should be much larger at the same time that it created an enormous deficit. Loss of the Crimean War was also the greatest international humiliation that Russia had ever experienced. In terms of the social production function of the leaders of Russia's government, the loss in status must have been enormous both from loss in international weight and from the realization that the internal control system was not as great as they had believed. Corruption and inefficiency seemed to have grown in the entire control system. Nicholas I, who had started this war, died and the reins of power were handed to his successor, Alexander II. Many of the Russian government's feverish activities that followed were likely inspired by the wish to repair that country's standing in the world.

## Reforms and the Deterioration of Social Production Functions

The emancipation of serfs under Alexander II was supposed to improve agriculture and to make it a viable source of revenue. True to tradition, the government attempted to save control costs in the operation by setting freed peasants up in communities that were collectively responsible for the periodic redistribution of land and for the collection of taxes. As a result, the expected effects in agricultural output did not materialize. But there was some positive effect on revenue because the nobility was eliminated as an intermediary.

Alexander II also introduced other reforms. He created a unified system of audit and control and a single state treasury with the state bank. He improved municipal self-government, changed procedures in law courts

from secret to public, introduced county councils (*zemstvos*) and obligatory military service. But most important, he started Russia on a vast project of industrialization that was continued by his successors. Railroads were built, protectionist tariffs were introduced to stimulate national production, grain export was stimulated even at the expense of famines, banks were established, and much heavy and light industry was built up mostly by the state. By 1890 the number of industrial workers had multiplied by more than 350 percent in only thirty years and was still increasing. Foreign capital had been attracted in enormous sums, both as loans and as direct investments.

Russia expanded its empire in Central Asia, finally reaching the Pacific seaboard. The first attempt to show its new military strength, the Russo-Turkish War of 1877-78 was successful. But the military did not know how to handle the new weapons with which they had been equipped and tactical training proved to be lacking. Little was gained in terms of international glory. At least in budgetary terms, the forced program of industrialization seemed to have paid off. By 1889 the deficit, at least in the "ordinary" budget, was gone. Only in the "extraordinary" budget from which railroad construction, for example, was financed, did a deficit reappear.

Numerous changes in taxation had occurred in this period of industrialization but mostly in the direction of a more rational tax system. A tax on urban property was introduced and the soul tax was finally replaced by a land tax, eradicating the discriminating distinction between taxable and nontaxable categories of people. Indirect taxes were increased, but the much-hated salt tax was abolished. Attempts to introduce an income tax were resisted and not until 1914 did they meet with success; changes in the very important tax on commerce and industry went through as did the introduction of a progressive tax on the salaries of government officials and of state enterprise employees.

The really unsettling effect did not come from these taxes. For the peasants it came from the redemption payments they had to make to pay for the land received during emancipation. These payments, in conjunction with the periodic redistribution of land, created vulnerable social production functions. Arrears in these payments increased and punishments for such arrears could and often did result in drastic changes in social production functions, such as the seizure of the peasant's property and forced labor to pay off the debt. In addition, the food supply was bad and resulted in near-famine conditions in 1897 and 1901.

Workers found themselves concentrated in large factories. In 1901 47 percent of workers were employed in plants of more than one hundred

workers, and 65 percent of these were in plants of more than one thousand crowded into a few urban areas. They thus had no access to traditional insurance arrangements such as an extended family. They were paid very little and were not allowed to organize. Price rises had serious effects on their ability to buy food and strikes were becoming more numerous in the 1890s. These and later strikes were purely defensive. Since the state was the largest employer, the direction of protest, as was the case with the peasants, was directed at the state.

The intelligentsia had long been drawn into protest by the frequent turnarounds in liberalization. Their source of income and status, mainly writing, was so restricted after intermittent waves of freedom that they too had very vulnerable social production functions. The petite bourgeoisie did not contribute to the great industrialization and thus their occupations lost status. Attempts to gain rights to influence political decision making (via the *duma*) did not get them very far.

The only guarantee of continuing to play any role at all for the nobility was the continuation of autocratic rule. Liberal sympathies among the nobility were mainly inspired by the justified fear that autocratic rule would not continue if political liberalization and improvement of peasants' conditions were not forthcoming. The internal contradiction of this stance had existed all along, but became even more obvious and gave the upper hand to those among the nobility who did not want to hear of liberal reforms. Within the imperial bureaucracy the nobility was also on the defensive because, due to forced industrialization, more technocrats were needed in influential positions, irrespective of their birth. On the remainders of their estates, the nobility continued to live on borrowed money. In 1885 a special bank was established by the government to help the nobles with low-interest loans. Still, the nobility was strong enough to cause frequent turnarounds by the government and its ministers.

The economic depression of 1900 and the war with Japan in 1904-05 had weakened both the budget and the repressive means of the government. The fact that the war was lost added to general feeling of depression. The revolution of 1905 would probably have succeeded had the government not been able to secure a short-term loan of 100 million rubles and shortly thereafter an even larger loan of 650 million rubles from various European countries. The repressive apparatus was reestablished and order was restored, but a large deficit had to be dealt with anew.

Some reforms were instituted, and the situation of the peasants was changed by the abolishment of redemption payments, land reform, and the

introduction of the right to choose a place of residence. The main effect of this latter reform was to free the richer peasant from the *obshchina* (community). In nine years (1906-15) only 22 percent could afford to leave the community. The peasants were not pacified.

The economy recovered quite well before World War I with the continuation of the internal policy of repression and occasional liberalization. The war, however, brought finances into great disarray and, not surprisingly, a public economy of makeshifts was the answer. In most cases the unsettling effects of a war in which the entire nation is endangered from the outside are absorbed by increased internal solidarity. The conditions for national defensive collective action would thus normally be achieved by the government: consensus on the threat and its source and consensus on the necessity and sufficiency of collective action to eliminate the threat. This was not the case in Russia. The new deterioration of production functions merely added to the old, which had developed too far after the first revolution in 1917. The economy of makeshifts of the new provisional government included all the possibilities of such an economy described earlier and was unable to stabilize production functions or to create national solidarity in the face of war. Only the October Revolution seemed to succeed enough to start a process of progressive stabilization.

## SUMMARY AND CONCLUSION

Social revolutions are not carried out by one particular group, but by the destabilization of many different groups. How is it possible that many different groups can be destabilized within a relatively short time? The answer given in this article is that every government shifts burdens onto its citizens via a negative transfer system. Under certain conditions a government, attempting to cover the rising budget deficit, will destabilize many different groups in its own society by negatively affecting the most sensitive social aspect of individuals—their social production functions.

Social production functions are relationships between input factors (such as privileges, rights, and credit) and two output factors (or goals) assumed to be common to all humanity: social approval and physical well-being. If privileges are revoked, social production functions are changed. When threatened, categories of people with similar social production functions will be tacitly coordinated into individual collective action. Such massive simultaneous individual action has effects similar to group collective action, but

entails no free-rider effect. This effect is also reduced in defensive group collective action due to the framing effects of rational action.

Both in France and in Russia, the major dynamic element in the process of unsettling changes was action by the government to cover a deficit. In both cases the deficits were due to foreign policy actions and to the government's attempts to increase internal control. This is not to say that all deficits have this unsettling effect. For example, England during the years before the French Revolution had an even larger deficit than France without the same effect. England, however, had a negative transfer system that allowed a more balanced distribution of burdens and, moreover, it had a more productive economy.

The theoretical contributions of this article lie mainly in shifts away from four standard positions: (1) the shift from the idea that revolutions are carried off by one major group to the idea that many different groups have to be destabilized simultaneously; (2) the shift away from looking at the individual actor either as a consumer (as in microeconomics) or as a player of societal roles (as in sociology) toward taking the individual to be a producer of goods that everyone wants to have; (3) the shift away from concentrating only on group collective action toward the inclusion of individual collective action; and (4) the shift away from concentrating only on selective incentives for collective action toward the inclusion of framing effects.

## NOTES

1. For an outline of the project in the context of a critique of other theories of revolution, see Lindenberg (1982). For historical detail gathered from a great variety of secondary sources, see Hart (1982a, 1982, 1984).

2. The emphasis on production has also been revived by Stigler and Becker (1977), but they do not identify these fundamental goods. See Lindenberg (1981a, 1984b, 1986c).

3. The assumption that outcomes are *only* coded in terms of gains and losses is probably wrong (see Lindenberg 1988), but this does not need to concern us here as long as we assume that outcomes are at least *also* coded in this way.

4. Other situational aspects will have an influence on the decision, but only indirectly through their effect on the situational salience of the goal, which in turn influenced the choice probability. For example, if the cost of a particular action increases, the choice probability for this alternative will decrease. If the choice probability approaches  $1/k$  when there are  $k$  alternatives, the frame is likely to change because it is not useful for making a choice (see Lindenberg 1981b, 1983, 1988).

Expressed algebraically, the discrimination model is as follows:

$$P_i = \beta (g_i - U_o) + 1/n \tag{1}$$

where  $\beta$  = situational salience of the maximand  $g$ ;

$g_i$  = the sum of the utilities of outcomes of the  $i$ th alternative, each weighted by the appropriate subjective event probability ( $i = 1, 2, \dots, n$ )

$U_o = (1/n) \sum g_i$  ( $i = 1, 2, \dots, n$ )

$P_i$  = probability of choosing the  $i$ th alternative ( $i = 1, 2, \dots, n$ )

The situational salience is a function of situation background aspects ( $x_i$ ):

$$\beta = f(x_1, x_2, \dots, x_n) \tag{2}$$

It can be seen from equation 1 that as salience decreases, the choice probability moves toward nondiscrimination and vice-versa. Notice that this theory is quite different from what Kahneman and Tversky (1979) call "framing." They make no assumption in regard to situational goals, while such goals are at the core of the discrimination model.

5. In literature there are many examples of people who, in trying to fight for their rights, are even willing to ruin their existence. Perhaps the most famous example is Heinrich von Kleist's *Michael Kohlhaus* (his American counterpart is Coalhouse Walker in E. L. Doctorow's *Ragtime*). Opp (forthcoming) stresses the importance of what he call "grievances" for participation in social movements. He mentions "framing," but does not elaborate on it.

6. See note 4.

7. Take a very simple situation where the individual has the choice of acting or not acting. In SEU theory, the individual will do something if

$$SEU_A - SEU_N > 0,$$

where:

$SEU_N = p_n U_g$  and  $SEU_A = (p_n + p_a) U_g - U_c$ ; and

$SEU_N$  = the subjectively expected utility for "not acting";

$SEU_A$  = the subjectively expected utility for "acting";

$U_g$  = the utility of realizing the situational goal  $g$ ;

$p_n$  = the subjective probability that  $g$  will be realized if "not acting" is chosen;

$p_a$  = the increase in subjective probability that  $g$  will be realized due to choosing "acting";

$U_c$  = the utility of the costs involved in "acting" (assuming that these costs are different in kind from the situational goal  $g$ ). The individual will act if and only if  $p_a U_g > U_c$ . When  $p_a$  is quite small and the acting cost is not trivial, action is unlikely. In the discrimination model, the choice probability for acting, given the action frame is "acting", is

$$P_A = \beta (p_a U_g / 2) + 0.5$$

and increasing  $U_c$  only lowers  $\beta$ , which still leaves  $P_A > 0.5$ . In other words, unless the action costs are expressed in the same coin as the goal (as would be the case with monetary goals and

monetary costs), they only lower the choice probability. Of course, if they lower the choice probability sufficiently, the whole frame will switch to "not acting" (see note 3) with

$$P_N = \beta (U_c / 2) + 0.5.$$

In this case, increasing  $p_a U_g$  will lower the salience ( $\beta$ ) for not acting.

8. Although I use the term production functions in the plural, it is clear that only one of the two (for physical well-being or for social approval) need be threatened in order for this hypothesis to hold. If both functions were threatened, the effect on individualized collective action would be stronger.

9. Taylor developed his theory on the basis of Elster's (1984) concept of "thin" rationality and Taylor's (1982) own work on community. The latter is in turn influenced by Sahlins's (1972) work on forms of reciprocity.

10. In the second stage individuals are supposedly members of a "subgroup." This is shorthand for saying that there is a good chance of reaching consensus on the identification of the threat and its source, and there is a good chance of reaching consensus on the necessity and—at least to some degree—sufficiency of collective action for eliminating or reducing the threat of deterioration. This consensus, in turn, is more easily achieved the less likely strategic behavior within the group of individuals is thought to be and the more often similar collective action has met with success in the past. The main uprisings leading to the French Revolution were connected to grain shortages and the Great Fear, especially on market days when the easy observability of results could make the various stages follow each other very quickly. In unstructured situations, political entrepreneurs may make a conscious effort to convince people of the necessity of collective action. They thereby become very important for moving the group from the first to the second stage, but they too need to address themselves to loss avoidance in the process (see, for instance, Popkin 1979, 1988). The learning that may be involved in moving from the first to the second stage is well illustrated by Koenker (1981), who traced the socialization for collective action of the Moscow workers in the Russian Revolution.

11. The revolting "masses" in Paris during the French Revolution fall into distinct subgroups when looked at more closely (Rude 1959). During the Estates-General, differences in the social production function *within* the Estates became apparent and led to new group boundaries and/or coalitions. The seemingly monolithic mass of workers during the Russian Revolution has been decomposed into many antagonistic subgroups, the boundaries of which follow social production functions (see Koenker 1981).

12. In addition, the solidarity norm will only be mobilized when harm (loss) or threatened harm (loss) to others is involved by not participating (Lindenberg 1979). But the status quo (or the status quo ante) has a decisive influence on the social definition of "harm" or "damage." I am supposed to help friends in need when their situations have deteriorated or is threatened to deteriorate, but nobody can exert moral pressure on me to help them to make more money than they ever did. The same holds for my relation to the group as a whole.

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